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          Validated By CRFValidator v 1.0.3
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Application No: 10589902   Version No: 2.0

          Input Set:

          Output Set:

                Started: 2009-02-23 17:51:03.872
               Finished: 2009-02-23 17:51:07.299
                Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 427 ms
         Total Warnings: 14
           Total Errors: 0
   No. of SeqIDs Defined: 26
      Actual SeqID Count: 26

Error code   Error Description

W 213   Artificial or Unknown found in <213> in SEQ ID (13)

W 213   Artificial or Unknown found in <213> in SEQ ID (14)

W 213   Artificial or Unknown found in <213> in SEQ ID (15)

W 213   Artificial or Unknown found in <213> in SEQ ID (16)

W 213   Artificial or Unknown found in <213> in SEQ ID (17)

W 213   Artificial or Unknown found in <213> in SEQ ID (18)

W 213   Artificial or Unknown found in <213> in SEQ ID (19)

W 213   Artificial or Unknown found in <213> in SEQ ID (20)

W 213   Artificial or Unknown found in <213> in SEQ ID (21)

W 213   Artificial or Unknown found in <213> in SEQ ID (22)

W 213   Artificial or Unknown found in <213> in SEQ ID (23)

W 213   Artificial or Unknown found in <213> in SEQ ID (24)

W 213   Artificial or Unknown found in <213> in SEQ ID (25)

W 213   Artificial or Unknown found in <213> in SEQ ID (26)
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<110>   WAKITA, Takaji
        KATO, Takanobu
        DATE, Tomoko
        MIYAMOTO, Michiko
        TANABE, Jun-ichi
        SONE, Saburo

<120>   NUCLEIC ACID CONSTRUCT CONTAINING FULL LENGTH GENOME OF HUMAN
        HEPATITIS C VIRUS ... AND METHOD OF PRODUCING HEPATITIS C VIRUS
        PARTICLE

<130>   1254-0321PUS1

<140>   10589902
<141>   2009-02-23


<150>   PCT/JP2005/003232
<151>   2005-02-21

<150>   JP 2004-045489
<151>   2004-02-20

<160>   26

<170>   PatentIn version 3.5

<210>   1
<211>   340
<212>   RNA
<213>   Hepatitis C virus


<220>
<221>   misc_feature
<222>   (1)..(340)
<223>   5' non-translated region of hepatitis C virus genomic RNA derived
        from JFH-1 clone

<400>   1
accugccccu aauaggggcg acacuccgcc augaaucacu ccccugugag gaacuacugu      60

cuucacgcag aaagcgccua gccauggcgu uaguaugagu gucguacagc cuccaggccc     120

cccccucccg ggagagccau aguggucugc ggaaccggug aguacaccgg aauugccggg     180

aagacugggu ccuuucuugg auaaacccac ucuaugcccg gccauuuggg cgugcccccg     240

caagacugcu agccgaguag cguuggguug cgaaaggccu ugugguacug ccugauaggg     300

cgcuugcgag ugccccggga ggucucguag accgugcacc                           340


<210>   2
<211>   573

<212> RNA
<213> Hepatitis C virus


<220>
<221> misc_feature
<222> (1)..(573)
<223> core protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400> 2
augagcacaa auccuaaacc ucaaagaaaa accaaaagaa acaccaaccg ucgcccagaa          60

gacguuaagu ucccgggcgg cggccagauc guuggcggag uauacuuguu gccgcgcagg         120

ggccccaggu ugggugugcg cacgacaagg aaaacuucgg agcgguccca gccacguggg         180

agacgccagc ccauccccaa agaucggcgc uccacuggca aggccugggg aaaaccaggu         240

cgcccccuggc cccuauaugg gaaugaggga cucggcuggg caggauggcu ccuguccccc         300

cgaggcucuc gccccuccug gggccccacu gaccccggc auaggucgcg caacguggu         360

aaagucaucg acacccuaac guguggcuuu gccgaccuca ugggguacau ccccgucgua         420

ggcgccccgc uuaguggcgc cgccagagcu gucgcgcacg gcgugagagu ccuggaggac         480

ggggguuaauu augcaacagg gaaccuaccc gguuuccccu uuucuaucuu cuugcuggcc         540

cuguuguccu gcaucaccgu uccggucucu gcu                                      573


<210> 3
<211> 576
<212> RNA
<213> Hepatitis C virus


<220>
<221> misc_feature
<222> (1)..(576)
<223> E1 protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400> 3
gcccaggugg agaauaccag uagcagcuac augguggacca augacugcuc caaugacagc          60

aucacuuggc agcucgaggc ugcgguucuc cacguccccg ggugcgucccc gugcgagaga         120

gugggggaaua cgucacgugu uugggugcca gucucgccaa acauggcugu gcggcagccc         180

ggugcccuca cgcagggucu gcggacgcac aucgauaugg uugugaugu cgccaccuuc          240

ugcucugcuc ucuacguggg ggaccucugu ggcgggguga gcucgcggc ccagguguuc          300

aucgucucgc cgcaguacca cugguuugug caagaaugca auugccccau cuacccuggc          360

accaucacug gacaccgcau ggcaugggac augaugauga acuggucgcc cacggccacc        420

augauccugg cguacgugau gcgcguccce gaggucauca uagacaucgu uagcgggggcu        480

cacuggggcg ucauguucgg cuuggccuac uucucuaugc agggagcgug ggcgaagguc        540

auugucaucc uucugcuggc cgcuggggug gacgcg        576


<210>  4
<211>  1290
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(1290)
<223>  E2 protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400>  4
ggcaccacca ccguuggagg cgcuguugca cguuccacca acgugauugc cggcgcguuc         60

agccauggcc cucagcagaa cauucagcuc auuaacacca acggcaguug gcacaucaac        120

cguacugccu ugaauugcaa ugacuccuug aacaccggcu uucucgcggc cuuguucuac        180

accaaccgcu uuaacucguc aggggugucca gggcgccugu ccgccugccg caacaucgag        240

gcuuuccgga uaggguggg cacccuacag uacgaggaua augucaccaa uccagaggau        300

augaggccgu acugcuggca cuaccccccca aagccgugug cguaguccc cgcgaggucu        360

gugugguggcc caguguacug uuucacccccc agcccggurg uagugggcac gaccgacaga        420

cguggagugc ccaccuacac augggagag aaugagacag augucuuccu acugaacagc        480

acccgaccgc cgcagggcuc augguucggc ugcacgugga ugaacuccac ugguuucacc        540

aagacuugug gcgcgccacc uugccgcacc agagcugacu caacgccag cacggacuug        600

uugugcccua cggauuguuu uaggaagcau ccugaugcca cuuauauuaa gugugguucu        660

gggcccuggc ucacaccaaa gugccuggucc cacuacccuu acagacucug gcauuacccc        720

ugcacaguca uuuuaccau cuucaagaua agaauguaug uagggggggu ugagcacagg        780

cucacggccg caugcaacuu cacucguggg gaucgcugcg acuuggagga cagggacagg        840

agucagcugu cuccucuguu gcacucuacc acggaauggg ccauccugcc cugcaccuac        900

ucagacuuac ccgcuuuguc aacuggucuu cuccaccuuc accagaacau cguggacgua        960

caauacaugu auggccucuc accugcuauc acaaaauacg ucguucgaug ggagugggug       1020

guacucuuau uccugcucuu agcggacgcc agagucugcg ccugcuugug gaugcucauc       1080

uuguugggcc aggccgaagc agcauuggag aaguuggucg ucuugcacgc ugcgagugcg      1140

gcuaacugcc auggccuccu auauuugcc aucuucuucg uggcagcuug gcacaucagg       1200

ggucgggugg uccccuugac caccuauugc cucacuggcc uauggcccuu cugccuacug      1260

cucauggcac ugccccggca ggcuuaugcc                                      1290


<210>  5
<211>  651
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(651)
<223>  NS2 protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400>  5
uaugacgcac cugugcacgg acagauaggc gugggguuugu ugauauugau cacccucuuc      60

acacucaccc cggggguauaa gaccccuccuc ggccagugucu guggugguu gugcuaucuc      120

cugacccugg gggaagccau gauucaggag uggguaccac ccaugcaggu gcgcggcggc       180

cgcgauggca ucgcgugggc cgucacuaua uucugcccgg guguggugu ugacauuacc        240

aaauggcuuu uggcguugcu ugggccugcu uaccucuuaa gggccgcuuu gacacaugug        300

ccguacuucg ucagagcuca cgcucugaua agggguaugcg cuuuggugaa gcagcucgcg       360

gggggguaggu auguucaggu ggcgcuauug gcccuuggca gguggacugg caccuacauc       420

uaugaccacc ucacaccuau gucggacugg gccgcuagcg gccugcgcga cuuagcgguc       480

gccguggaac ccaucaucuu caguccgaug gagaagaagg ucaucgucug gggagcggag        540

acggcugcau gugggggacau ucuacaugga cuucccgugu ccgcccgacu cggccaggag       600

auccuccucg gcccagcuga uggcuacacc uccaaggggu ggaagcuccu u                651


<210>  6
<211>  1893
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(1893)
<223>  NS3 protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400> 6

gcucccauca cugcuuaugc ccagcaaaca cgaggccucc ugggcgccau aguggugagu       60

augacggggc gugacaggac agaacaggcc ggggaaguuc aaauccuguc cacagucucu      120

caguccuucc ucggaacaac caucucgggg guuuugugga cuguuuacca cggagcuggc      180

aacaagacuc uagccggcuu acgggguccg gucacgcaga uguacucgag ugcugagggg      240

gacuugguag gcuggcccag cccccugggg accaagucuu uggagccgug caagugugga      300

gccgucgacc uauaucuggu cacgcggaac gcugaugucu cccggcucg gagacgcggg       360

gacaagcggg gagcauugcu cuccccgaga cccauuucga ccuugaaggg guccucgggg      420

gggccggugc ucugcccuag gggccacguc guugggcucu uccgagcagc ugugugcucu      480

cggggcgugg ccaaauccau cgauuucauc cccguugaga cacucgacgu uguuacaagg      540

ucucccacuu ucagugacaa cagcacgcca ccggcugugc cccagaccua ucaggucggg      600

uacuugcaug cuccaacugg caguggaaag agcaccaagg ucccugucgc guaugccgcc      660

cagggguaca aaguacuagu gcuuaacccc ucgguagcug ccacccuggg guuugggggcg      720

uaccuaucca aggcacaugg caucaauccc aacauuagga cuggagucag gaccgugaug      780

accgggagg ccaucacgua cuccacauau ggcaaauuuc ugccgaugg gggcugcgcu        840

agcggcgccu augacaucau cauaugcgau gaaugccacg cuguggaugc uaccuccauu      900

cucggcaucg gaacgguccu ugaucaagca gagacagccg gggucagacu aacugugcug      960

gcuacggcca caccccccgg gucagugaca accccccauc ccgauauaga agagguaggc     1020

cucgggcggg agggugagau cccccuucuau ugggagggcga uuccccuauc cugcaucaag    1080

ggagggagac accugauuu cugccacuca aagaaaaagu gugacgagcu cgcggcggcc      1140

cuucgggggca ugggcuugaa ugccguggca acuauagag gguuggacgu cuccauaaua     1200

ccagcucagg gagauguggu ggucgucgcc accgacgccc ucaugacggg guacacugga     1260

gacuuugacu ccgugaucga cugcaaugua gcggucaccc aagcugucga cuucagccug     1320

gaccccaccu ucacuauaac cacacagacu gucccacaag acgcugucuc acgcagucag     1380

cgccgcgggc gcacagguag aggaagacag ggcacuuaua gguauguuuc cacuggugaa     1440

cgagccucag gaauguuuga caguguagug cuuugugagu gcuacgacgc aggggcugcg     1500

ugguacgauc ucacaccagc ggagaccacc gucaggcuua gagcguauuu caacacgccc     1560

ggccuacccg ugugucaaga ccaucuugaa uuuugggagg caguuuucac cggccucaca     1620

cacauagacg cccacuuccu cucccaaaca aagcaagcgg gggagaacuu cgcguaccua     1680

guagccuacc aagcuacggu gugcgccaga gccaaggccc cucccccguc cugggacgcc          1740

auguggaagu gccuggcccg acucaagccu acgcuugcgg gccccacacc ucuccuguac          1800

cguuugggcc cuauuaccaa ugaggucacc cucacacacc cugggacgaa guacaucgcc          1860

acaugcaugc aagcugaccu ugaggucaug acc                                      1893


<210>   7
<211>   162
<212>   RNA
<213>   Hepatitis C virus


<220>
<221>   misc_feature
<222>   (1)..(162)
<223>   NS4A protein-coding sequence of hepatitis C virus genomic RNA
        derived from JFH-1 clone

<400>   7
agcacguggg uccuagcugg aggaguccug gcagccgucg ccgcauauug ccuggcgacu           60

ggaugcguuu ccaucaucgg ccgcuugcac gucaaccagc gagucgucgu ugcgccggau          120

aaggaggucc uguaugaggc uuuugaugag auggaggaau gc                            162


<210>   8
<211>   783
<212>   RNA
<213>   Hepatitis C virus


<220>
<221>   misc_feature
<222>   (1)..(783)
<223>   NS4B protein-coding sequence of hepatitis C virus genomic RNA
        derived from JFH-1 clone

<400>   8
gccucuaggg cggcucucau cgaagagggg cagcggauag ccgagauguu gaaguccaag           60

auccaaggcu ugcugcagca ggccucuaag caggcccagg acauacaacc cgcuaugcag          120

gcuucauggc ccaaagugga acaauuuugg gccagacaca uguggaacuu cauuagcggc          180

auccaauacc ucgcaggauu gucaacacug ccagggaacc ccgcgguggc uuccaugaug          240

gcauucagug ccgcccucac caguccguug ucgaccagua ccaccauccu ucucaacauc          300

augggaggcu gguuagcguc ccagaucgca ccacccgcgg gggccaccgg cuuugucguc          360

aguggccugg uggggcugc cgugggcagc auaggccugg uaaggugcu gguggacauc          420

cuggcaggau auggugcggg cauuucgggg gcccucgucg cauucaagau caugucuggc          480

gagaagcccu cuauggaaga ugucaucaau cuacugccug ggauccuguc uccgggagcc          540

cuggugugg gggucaucug cgcggccauu cugcgccgcc acgugggacc gggggagggc          600

gcgguccaau ggaugaacag gcuuauugcc uuugcuucca gaggaaacca cgucgccccu          660

acucacuacg ugacggaguc ggaugcgucg cagcguguga cccaacuacu uggcucucuu          720

acuauaacca gccuacucag aagacuccac aauuggauaa cugaggacug ccccaucccca         780

ugc                                                                        783


<210>  9
<211>  1398
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(1398)
<223>  NS5A protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone

<400>  9
uccggauccu ggcuccgcga cgugugggac uggguuugca ccaucuugac agacuucaaa          60

aauuggcuga ccucuaaauu guuccccaag cugcccggcc uccccuucau cucuugucaa          120

aaggggguaca aggugugug ggccggcacu ggcaucauga ccacgcgcug cccuugcggc          180

gccaacaucu cuggcaaugu ccgccugggc ucuaugagga ucacagggcc uaaaaccugc          240

augaacaccu ggcaggggac cuuuccuauc aauugcuaca cggagggcca gugcgcgccg          300

aaaccccccca cgaacuacaa gaccgccauc uggaggggug cggccucgga uacgcggag          360

gugacgcagc aug ggucgua cuccuaugua acaggacuga ccacugacaa ucugaaaauu          420

ccuugccaac uaccuucucc agaguuuuuc uccuggguugg acggugugca gauccauagg          480

uuugcacccca caccaaagcc guuuuuccgg gaugaggucu cguucugcgu ugggcuuaau         540

uccuaugcug ucgggucca gcuucccugu gaaccugagc ccgacgcaga cguauugagg          600

uccaugcuaa cagauccgcc ccacaucacg gcggagacug cggcgcggcg cuuggcacgg          660

ggaucaccuc caucugaggc gagcuccuca gugagccagc uaucagcacc gucgcugcgg          720

gccaccugca ccacccacag caacaccuau gacguggaca uggucgaugc caaccugcuc          780

auggagggcg gugguggcuca gacagagccu gaguccaggg ugcccguucu ggacuuucuc          840

gagccaaugg ccgaggaaga gagcgaccuu gagcccucaa uaccaucgga gugcaugcuc          900

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cccaggagcg gguuuccacg ggccuuaccg gcuugggcac ggccugacua caacccgccg        960

cucguggaau cguggaggag gccagauuac caaccgccca ccguugcugg uugugcucuc       1020

cccccccccca agaaggcccc gacgccuccc ccaaggagac gccggacagu gggucugagc       1080

gagagcacca uaucagaagc ccuccagcaa cuggccauca agaccuuugg ccagcccccc       1140

ucgagcggug augcaggcuc guccacgggg gcgggcgccg ccgaauccgg cgguccgacg       1200

uccccuggug agccggcccc cucagagaca gguuccgccu ccucuaugcc cccccucgag       1260

ggggagccug gagauccgga ccuggagucu gaucagguag agcuucaacc ucccccccag       1320

gggggggggg uagcucccgg uucgggcucg gggucuuggu cuacuugcuc cgaggaggac       1380

gauaccaccg ugugcugc                                                     1398


<210>  10
<211>  1773
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(1773)
<223>  NS5B protein-coding sequence of hepatitis C virus genomic RNA
       derived from JFH-1 clone


<400>  10
uccaugucau acuccuggac cggggcucua auaacucccu guagccccga agaggaaaag         60

uugccaauca acccuuugag uaacucgcug uugcgauacc auaacaaggu guacuguaca        120

acaucaaaga gcgccucaca gagggcuaaa aagguaacuu ugacaggac gcaagugcuc        180

gacgcccauu augacucagu cuuaaaggac aucaagcuag cggcuuccaa ggucagcgca        240

aggcuccuca ccuuggagga ggcgugccag uugacuccac cccauucugc aagauccaag        300

uauggauucg gggccaagga gguccgcagc uuguccggga gggccguuaa ccacaucaag        360

uccgugugga aggaccuccu ggaagaccca caaacaccaa uuccacaac caucauggcc        420

aaaaaugagg uguucugcgu ggaccccgcc aagggggggua agaaaccagc ucgccucauc        480

guuuacccug accucggcgu ccgggucugc gagaaaaugg cccucuauga cauuacacaa        540

aagcuuccuc aggcgguaau gggagcuucc uauggcuucc aguacuccccc ugcccaacgg        600

guggaguauc ucuugaaagc augggcggaa aagaaggacc ccaugggguuu uucguaugau        660

acccgaugcu ucgacucaac cgucacugag agagacauca ggaccgagga guccauauac        720
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caggccugcu cccugcccga ggaggcccgc acugccauac acucgcugac ugagagacuu      780

uacguaggag ggcccauguu caacagcaag ggucaaaccu gcgguuacag acguugccgc      840

gccagcgggg ugcuaaccac uagcaugggu aacaccauca caugcuaugu gaaagcccua      900

gcggccugca aggcugcggg gauaguugcg cccacaaugc ugguaugcgg cgaugaccua      960

guagucaucu cagaaagcca ggggacugag gaggacgagc ggaaccugag agccuucacg     1020

gaggccauga ccagguacuc ugccccuccu ggugaucccc cagaccgga auaugaccug     1080

gagcuaauaa cauccuguuc cucaaaugug ucuguggcgu ugggcccgcg gggccgccgc     1140

agauacuacc ugaccagaga cccaaccacu ccacucgccc gggcugccug ggaaacaguu     1200

agacacuccc cuaucaauuc auggcuggga aacaucaucc aguaugcucc aaccauaugg     1260

guucgcaugg uccuaaugac acacuucuuc uccauucuca ugguccaaga cacccuggac     1320

cagaaccuca acuuugagau guaggauca guauacuccg ugaauccuuu ggaccuucca     1380

gccauaauug agagguuaca cgggcuugac gccuuuucua ugcacacaua cucucaccac     1440

gaacugacgc ggguggcuuc agcccucaga aaacuugggg cgccaccccu cagggugugg     1500

aagagucggg cucgcgcagu cagggcgucc cucaucuccc guggagggaa agcggccguu     1560

ugcggccgau aucucuucaa uugggcggug aagaccaagc ucaaacucac uccauugccg     1620

gaggcgcgcc uacuggacuu auccaguugg uucaccgucg cgccggcgg gggcgacauu     1680

uuucacagcg ugucgcgcgc ccgaccccgc ucauuacucu ucggccuacu ccuacuuuuc     1740

guaggggguag gccucuuccu acuccccgcu cgg                                  1773


<210>  11
<211>  239
<212>  RNA
<213>  Hepatitis C virus


<220>
<221>  misc_feature
<222>  (1)..(239)
<223>  3' non-translated region of hepatitis C virus genomic RNA derived
       from JFH-1 clone

<400>  11
uagagcggca cacacuaggu acacuccaua gcuaacuguu ccuuuuuuuu uuuuuuuuuu       60

uuuuuuuuuu uuuuuuuuuu uuuuucuuuu uuuuuuuuuu cccucuuucu ucccuucuca      120

ucuuauucua cuuucuuucu ugguggcucc aucuuagccc uagucacggc uagcugugaa      180

agguccguga gccgcaugac ugcagagagu gccguaacug gucucucugc agaucaugu      239
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<210> 12
<211> 9678
<212> RNA
<213> Hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(9707)
<223> full-length Hepatitis C virus genomic RNA derived from JFH-1
      clone

<400> 12
accugccccu aauaggggcg acacuccgcc augaaucacu ccccgugag gaacuacugu   60

cuucacgcag aaagcgccua gccauggcgu uaguaugagu gucguacagc cuccaggccc   120

cccccucccg ggagagccau aguggucugc ggaaccggug aguacaccgg aauugccggg   180

aagacugggu ccuuucuugg auaaacccac ucuaugcccg gccauuuggg cgugcccccg   240

caagacugcu agccgaguag cguuggguug cgaaaggccu uguggucuug ccugauaggg   300

cgcuugcgag ugccccggga ggucucguag accgugcacc augagcacaa auccuaaacc   360

ucaaagaaaa accaaaagaa acaccaaccg ucgcccagaa gacguuaagu cccgggcggg   420

cggccagauc guuggcggag uauacuuguu gccgcgcagg gccccagguu ugggugugcg   480

cacgacaagg aaaacuucgg agcggucccа gccacugggg agacgccagc ccauccccaa   540

agaucggcgc uccacuggca aggccugggg aaaaccaggu cgccccuggc cccuauaugg   600

gaaugaggga cucggcuggg caggauggcu ccuguccccc cgaggcucuc gccccuccug   660

gggcccccacu gacccccggc auaggucgcg caacgugggu aaagucaucg acacccuaac   720

guguggcuuu gccgaccuca uggggguacau ccccgucgua ggcgccccgc uuaguggcgc   780

cgccagagcu gucgcgcacg gcgugagagu ccuggaggac ggggguuaauu augcaacagg   840

gaaccuaccc gguuuccccu uucuaucuu cuugcuggcc cguuuguccu gcaucaccgu   900

uccggucucu gcugcccagg ugaagaauac caguagcagc uacaugguga ccaaugacug   960

cuccaaugac agcaucacuu ggcagcucga ggcugcgguu uccacgucc ccggugcgu   1020

cccgugcgag agagugggga auacgucacg uguugggug ccagucucgc caaacauggc   1080

ugugcggcag cccggugccc ucacgcaggg ucugcggacg cacaucgaua ugguugugau   1140

guccgccacc uucugcucug cucucuacgu gggggaccuc uguggcgggg ugaugcucgc   1200

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caucuacccu ggcaccauca cuggacaccg cauggcaugg gacaugauga ugaacugguc   1320

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